

## REMARKS

Applicants respectfully request entry of the foregoing amendments and reconsideration of the application in view of the amendments above and the remarks below. Claims 1-3, 18, 33-37 and 39 have been amended. Claims 1 through 37 and 39 are currently pending, of which claims 1, 2, 3, 18, and 33 – 37 and 39 are independent claims. No new matter has been added by way of the amendments above.

Claims 1-32 stand rejected under 35 U.S.C. § 112 as failing to comply with the written description requirement. Claims 1-4, 6-9, 12-15, 17-19, 21-24, 27-30, 32, and 37-40 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,243,181 B1 to Golovchenko et al. Claims 33-36 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,894,537 to Berkey et al. Claims 5 and 20 stand rejected under U.S.C. § 103(a) as being unpatentable over Golovchenko in view of U.S. Patent 6,005,702 to Suzuki et al. Claims 10-11 and 25-26 stand rejected under U.S.C. § 103(a) as being unpatentable over Golovchenko. Claims 16 and 31 stand rejected under U.S.C. § 103(a) as being unpatentable over Golovchenko in view of U.S. Patent 5,717,510 to Ishikawa et al.

Each of these rejections is traversed for the reasons below.

### The Claims Comply with The Written Description Requirement

Claims 1-32 stand rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. This rejection is traversed for the reasons below.

First, regarding independent claim 1, the Examiner asserted that the specification fails to disclose “no amplifier being disposed between a first pair of adjacent sections from the plurality of sections and a second pair of adjacent sections from the plurality of sections.” The Examiner further asserts that the specification seems to suggest the opposite: “[t]he pulse evolution in lossy fibres can also be modelled by this equation as long as the amplification period is different from the period of dispersion management” (citing paragraph 0029; see also page 6, lines 10-12 of original specification).

The Applicants respectfully disagree with the Examiner. The specification portion cited by the Examiner discloses that, in some embodiments, the amplification period differs from the dispersion-management period. The specification, therefore, discloses two different sets of embodiments: one where the amplification period is greater than the dispersion-management period, and one where the amplification period is less than the dispersion-management period. Consequently, the specification discloses embodiments where the amplification period is greater than the dispersion-management period; for such embodiments, multiple pairs of adjacent sections (each of which is associated with a dispersion-management period) are located between a pair of amplifiers (which is associated with an amplification period). Thus, the specification discloses “no amplifier being disposed between a first pair of adjacent sections from the plurality of sections and a second pair of adjacent sections from the plurality of sections.” Applicants respectfully request that the rejection of claim 1 be withdrawn.

Second, regarding independent claims 2, 3 and 18, the Examiner asserted that the specification fails to disclose “a first section having a dispersion, a second section having a dispersion of opposite sign from the dispersion of the first section, a third section having a dispersion and a fourth section having a dispersion of opposite sign from the dispersion of the third section without an intervening amplifier.” Again, the Examiner further asserts that the specification seems to suggest the opposite: “[t]he pulse evolution in lossy fibres can also be modelled by this equation as long as the amplification period is different from the period of dispersion management” (citing paragraph 0029; see also page 6, lines 10-12 of original specification).

Again, the Applicants respectfully disagree with the Examiner. As discussed above, the specification discloses embodiments where the amplification period is greater than the dispersion-management period; for such embodiments, multiple pairs of adjacent sections (each of which is associated with a dispersion-management period) are located between a pair of amplifiers (which is associated with an amplification period). Such multiple pairs of adjacent sections include at least two sections, each of which have two sections with opposite signs. Thus, the specification discloses “a first section having a dispersion, a second section having a dispersion of opposite sign from the dispersion of the first section, a third section having a

dispersion and a fourth section having a dispersion of opposite sign from the dispersion of the third section without an intervening amplifier.” Applicants respectfully request that the rejections of claims 2, 3 and 18 be withdrawn.

#### The Claims Are Patentable over Golovchenko

Claims 1-4, 6-9, 12-15, 17-19, 21-24, 27-30, 32, 37 and 39 stand rejected under 35 U.S.C. § 102(e) as being anticipated Golovchenko. This rejection is traversed for the following reason below.

Unlike independent claim 1, which recites “no amplifier being disposed between a first pair of adjacent sections from the plurality of sections and a second pair of adjacent sections from the plurality of sections” where “the first pair of adjacent sections are mutually exclusive from a second pair of adjacent sections,” Golovchenko fails to disclose or suggest such an arrangement. Golovchenko merely discloses a schematic diagram of a dispersion map, see Figure 2, which includes a pair of fiber segments between two amplifiers. In other words, Golovchenko merely discloses a system having an amplifier between any given two pairs of mutually exclusive fiber segments. Thus, independent claim 1 is patentable over Golovchenko.

Independent claims 2, 3 and 18 include similar recitations, and therefore Golovchenko also fails to disclose such arrangements. Thus, independent claims 2, 3 and 18 are patentable over Golovchenko.

Claims 4, 6-9, 12-15 and 17 depend from independent claim 3; claims 19, 21-24, 27-30 and 32 depend from independent claim 18. Because independent claims 3 and 18 are patentable over Golovchenko as discussed above, their respective dependent claims 4, 6-9, 12-15 and 17, and 19, 21-24, 27-30 and 32, respectively, are also patentable over Golovchenko.

Finally, unlike independent claims 37 and 39, which recite the bandpass filter being disposed at a center of each of the at least one normal dispersion section from the plurality of sections, Golovchenko fails to disclose or suggest such an arrangement. Golovchenko merely discloses a filter in between an amplifier 10 or 20 and the dispersion fiber 40.

In the Advisory Action of September 13, 2006, the Examiner stated that Figure 2 of Golovchenko discloses a filter 30 in a center of each of the at least one normal dispersion section

from the plurality of sections because a “section” can be considered as the beginning of the fiber line until the midpoint where the normal dispersion fiber 40 end.” The Applicant respectfully disagrees for the following reasons. First, Golovchenko fails to disclose the characteristic of the beginning portion of the fiber line (i.e., the portion of the fiber line to the left of amplifier 10 in Figure 2). The written description of Golovchenko is entirely silent as to whether this portion of the fiber line has a positive dispersion. Second, Figure 2 of Golovchenko depicts this beginning portion of the fiber line as a thick line just as the figure depicts the anomalous dispersion fiber 50 and unlike the thin line used to depict the normal dispersion fiber 40. Figure 2 appears to teach away from the beginning portion of the fiber line having a positive dispersion. Thus, Golovchenko appears to merely disclose a filter in between an amplifier 10 or 20 and the dispersion fiber 40.

Thus, the present invention as recited by independent claims 37 and 39 is patentable over Golovchenko.

#### These Claims are Patentable over Berkey

Claims 33-36 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Berkey. This rejection is traversed for the following reason below.

Unlike independent claim 33, which recites launching the soliton or soliton-like optical pulses into an optical fiber communication system, Berkey fails to disclose or suggest transmitting these types of pulses. Berkey merely discloses transmitting “pulses” over an optical fiber communication system. Berkey is silent on transmitting “soliton or soliton-like optical pulses.” Thus, independent claim 33 is patentable over Berkey.

Independent claims 34, 35 and 36 include similar recitations, and therefore Berkey also fails to disclose such arrangements. Thus, independent claims 34, 35 and 36 are patentable over Berkey.

#### The Claims are Patentable over Golovchenko in view of Suzuki

Claims 5 and 20 stand rejected under U.S.C. § 103(a) as being unpatentable over Golovchenko in view of Suzuki. This rejection is traversed for the following reason below.

Claim 5 depends from independent claim 3; claim 20 depends from independent claim 18. Because independent claims 3 and 18 are patentable over Golovchenko as discussed above, their respective dependent claims 5 and 20 are also patentable over Golovchenko. Suzuki fails to remedy the deficiency of Golovchenko. Thus, dependent claims 5 and 20 are also patentable over Golovchenko in view of Suzuki.

The Claims are Patentable over Golovchenko

Claims 10-11 and 25-26 stand rejected under U.S.C. § 103(a) as being unpatentable over Golovchenko. In particular, the Examiner has taken official notice that “dispersion managed systems using optical grating and an optical circulator is well known and widely used in the art.” This rejection is traversed for the following reasons below.

The Applicants respectfully disagree with the Examiner. In particular, the Applicants challenges the use of official notice and request that the Examiner support the finding with adequate documentary evidence. See M.P.E.P. 2144.03(C).

The Examiner stated that “dispersion managed systems using optical grating and an optical circulator is well known and widely used in the art” (emphasis added). The relevant question is not whether such systems are presently well known and widely used – the relevant question is whether such systems were well known at the time of the invention. The Applicants respectfully point out that the present application claims priority to back to 1997. What may seem well known or widely used today is in no way indicative of what was well known or widely used 9 years earlier. Thus, the Applicants respectfully request that this rejection be supported with adequate documentary evidence or withdrawn.

The Claims are Patentable over Golovchenko in view of Ishikawa

Claims 16 and 31 stand rejected under U.S.C. § 103(a) as being unpatentable over Golovchenko in view of Ishikawa. Claim 16 depends from independent claim 3; claim 31 depends from independent claim 18. Because independent claims 3 and 18 are patentable over Golovchenko as discussed above, their respective dependent claims 16 and 31 are also patentable

over Golovchenko. Ishikawa fails to remedy the deficiency of Golovchenko. Thus, dependent claims 5 and 20 are also patentable over Golovchenko in view of Ishikawa.

**Conclusion**

All rejections having been addressed, Applicants respectfully submit that the present application is in condition for allowance, and earnestly solicit a Notice of Allowance, which is believed to be in order. Should the Examiner have any questions regarding this communication, or the application in general, he is invited to telephone the undersigned at 703-456-8108.


The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

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Respectfully submitted,  
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